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**Research Paper**

# Scientometric Landscape of Live Streaming for Social Impact: Current Research and Trends

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***Abstract:*** *The process of digitalization drives creativity and innovation to expand market share. Nevertheless, the literature has yet to fully investigate the market's adoption of live streaming. The article explores the trend of live streaming over a ten-year period by analyzing 500 publications from the Web of Science. Key findings reveal that live streaming has evolved from entertainment to a powerful tool in e-commerce, education, and community engagement. Two primary research clusters were identified: technical, social aspects and impacts on commerce and consumer behavior. The study underscores the importance of live streaming in enhancing consumer trust and engagement, crucial for driving purchase intentions. Challenges such as technical issues and audience engagement are noted, along with the accelerated adoption due to post pandemic. Emerging trends include integration with virtual reality and ethical considerations. The study calls for further research on cross-cultural analysis, product differentiation, and negative aspects, providing valuable insights for leveraging live streaming for social welfare and community empowerment.*
***Keywords: live streaming, scientometric analysis, social impact***

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## I. BACKGROUND

Live streaming has undeniably emerged as a disruptive technology, fundamentally changing the way people communicate, share information, and conduct business (Bungsraz, 2024; Hofmann, 2024; Singhal and Kapur, 2024). This novel strategy, shown by e-commerce live streaming, combines digital technology with the tangible economy, enhancing cost-effectiveness, productivity, and user satisfaction for both sellers and buyers(Zhong and Adilbish, 2024a). Research investigates consumer preferences and finds that middle-aged women in certain areas favor affordable products, even though they have lower conversion rates compared to traditional marketing techniques (Jian, 2024). Live streaming commerce serves as an intermediary between suppliers and customers, improving communication and sales through platforms such as Social Bread in Indonesia (Dinansyahet al., 2024). The emergence of live-streaming commerce, often referred to as shoppertainment, has significantly impacted consumer behaviors and lives, necessitating comprehensive literature studies and future study to gain a deeper understanding of this dynamic phenomenon (Nuraisahet al., 2024; Xu et al., 2023).

Live streaming has evolved beyond its original purpose in entertainment and to expand social interaction, becoming a powerful presence in the e-commerce industry (Xiong and Li, 2024a). This evolution is propelled by various pivotal aspects that augment consumer engagement and stimulate sales. E-commerce live streaming offers distinct advantages such as interactivity, personalized recommendations, real-time marketing, and socialization, making it an effective and appealing means of purchasing (TEOH and Hong, 2024). The role of live streamers is essential, since their competence, moral reputation, popularity, and responsiveness have a substantial impact on customer engagement through perceived trust and enjoyment (Xiong and Li, 2024a). Furthermore, the incorporation of digital technology into the tangible economy via e-commerce live streaming has streamlined expenses, raised productivity, and elevated the total customer satisfaction, signifying a noteworthy revolution in the e-commerce industry (Zhong and Adilbish, 2024b). However, this rapid growth also brings challenges, like deceptive advertising by celebrities, which could mislead consumers and erode trust, requiring solutions to protect consumer rights and maintain market integrity (Pei, 2024). In addition, Liu and Hamid's conceptual framework emphasizes that anchor qualities, social interaction, and perceived value play a

crucial role in shaping customer purchase intentions in live shopping scenarios (Liu and Hamid, 2024a). The in-depth comprehension of the many forces at work in live commerce highlights its capacity as a multi-billion-dollar sector, propelled by instantaneous encounters, product showcases, and exclusive offers that capture consumers and enhance sales. By utilizing these insights, firms may enhance their brand promotion, enhance consumer satisfaction, and optimize product development. This further establishes live streaming as a fundamental aspect of contemporary e-commerce(Liu and Hamid, 2024a; Pei, 2024; TEOH and Hong, 2024; Xiong and Li, 2024a; Zhong and Adilbish, 2024b).

Live streaming is a unique solution due to serve as a potent instrument for educational endeavors, political advocacy, and fostering community connections, particularly among disadvantaged or marginalized populations(Yu, 2023; Zhang et al., 2024). Further, live streaming promotes social connections and enables the sharing of knowledge(Bai, 2024). In educational settings, it provides convenient and interactive learning experiences. As a result, it transforms traditional learning models and empowers individuals to engage in self-education (Bai, 2024). Furthermore, live streaming has been successfully employed for the purpose of religious conversion and community organization, because actively involve young people in religious and social endeavors, thereby promoting a sense of community and collaborative effort (Huda et al., 2023).In the other hand,it enhanced psychological and social advantages compared to non-live video content, as it effectively fulfils diverse psychological demands and provides users with a more captivating and satisfying experience (Rubenking and Strawser, 2023). The inclusion of multiple aspects of society in live streaming platforms improves the level of audience involvement and fosters favorable views. This, in turn, can lead to greater involvement and endorsement of different causes, such as political action and community projects (Lin and Lee, 2024). Nevertheless, it is crucial to acknowledge that the influence of live streaming is not universally beneficial. For instance, its utilization among students has been associated with adverse behaviors, including decreased engagement in religious activities and heightened disruptions in the classroom (Setyawan and MZ, 2023). Although there are obstacles, the overall capacity of live streaming to enable individuals, promote social relationships and assist collective efforts in different areas remains substantial, making it a powerful instrument for community development and societal transformation.

Scholar (Xiaojun Mai et al., 2023) examines Live Streaming Commerce (LSC) by analyzing 75 publications and categorizing them into three main areas: streamers, platforms, and viewers. It uses quantitative approaches and structural equation modelling to identify themes such as customer behavior, credibility, trust, and purchase intention. The research also highlights the importance of social presence, information quality, and price tactics in shaping consumer behavior and trust(Mai et al., 2023). (Chen Yanhao et al., 2023) used bibliometric analysis to examine 930 studies on travel live streaming from 2015-2023. China is the primary contributor to research, followed by the United States. The study identifies four main areas of focus: consumption, technology, platforms, and teaching. The study also identifies prominent writers and publications. The findings improve our understanding of live streaming in the tourism industry and support the long-term viability of related research (Yanhaoet al., 2024). Furthermore, research by (Xiaohui Bai et al., 2024) stated livestreaming has become a significant influence on the commerce and service industry, with a growing prevalence in the business sector. This study analyzes academic trends in livestreaming, identifying significant contributions and highlighting deficiencies in research. It proposes a comprehensive future research plan to address cross-cultural analysis, product differentiation, post-adoption behavior, negative aspects, and intellectual property concerns(Bai et al., 2024).Live streaming significantly impacts commerce, tourism, and the service industry, with factors like social presence, information quality, and price tactics influencing consumer behavior. China and the US are prominent contributors. However, research gaps exist in cross-cultural analysis, product differentiation, post-adoption behavior, negative aspects, and intellectual property concerns suggests a comprehensive future research agenda to advance the field and address its multifaceted impacts.

This study aims to fill the existing gap by conducting a scientometric analysis of the current literature on live streaming and its impact on social influence and community growth among entrepreneurs. This study aims to analyze the emerging subject of live streaming to discover important patterns, topics, and areas of research that have not been explored. By doing so, it will contribute to a better understanding of how live streaming may be used to empower entrepreneurs and promote positive social change. Furthermore, it will unveil the predominant themes and study domains that have garnered the highest level of focus, as well as those that necessitate additional exploration. The results of this study will be highly valuable to entrepreneurs, politicians, educators, and researchers who are interested in utilizing live streaming for the purpose of promoting social welfare. The findings will be used to shape future research and develop effective strategies for using live streaming to create supportive communities and empower entrepreneurs in the digital era.

## II. METHOD

This study utilizes a quantitative methodology to provide a comprehensive understanding of research endeavors. The scientometric approach analyzes scientific literature, offering insights into research trends, patterns, and impacts. The objective of this study is to systematically examine specific literature, identify significant research patterns, and gain a holistic understanding of the scientific field(Pivnenko and Vitenko, 2024). Furthermore, a scientometric approach is utilized to examine the Live Streaming research landscape. A scientometric approach empower researchers to identify the most influential studies and authors, track the evolution of research trends, pinpoint areas where further investigation is needed. By providing a structured approach to analyzing large volumes of publication data, these methods enhance the efficiency and impact of research in this dynamic field(Tang, 2023).The data was collected using Web of Science, an extensive citation database that includes peer-reviewed academic publications (Kumpulainen and Seppänen, 2022). The search approach is formulating a search string that integrates terms associated with "Live streaming" and "Social impact". The Clarivate database filters are designed to priorities recent and influential research. These filters restrict the publication date to the period from 2015 to 2024. The filters also include various document types, such as articles, proceeding papers, early access publications, review articles, and data papers. Additionally, the filters allow users to focus on specific subject areas, such as sustainability, consumer services, human behavior, and psychology. Data arranged in the BibTeX format. The data was gathered and entered Mendeley. A total of 558 valid data entries were obtained from the Clarivate database for further analysis. By employing several selection criteria such as scope, keywords, and alignment, a total of 500 appropriate articles were discovered to meet the intended objectives of the research.Figure 1 below explains the research protocols.

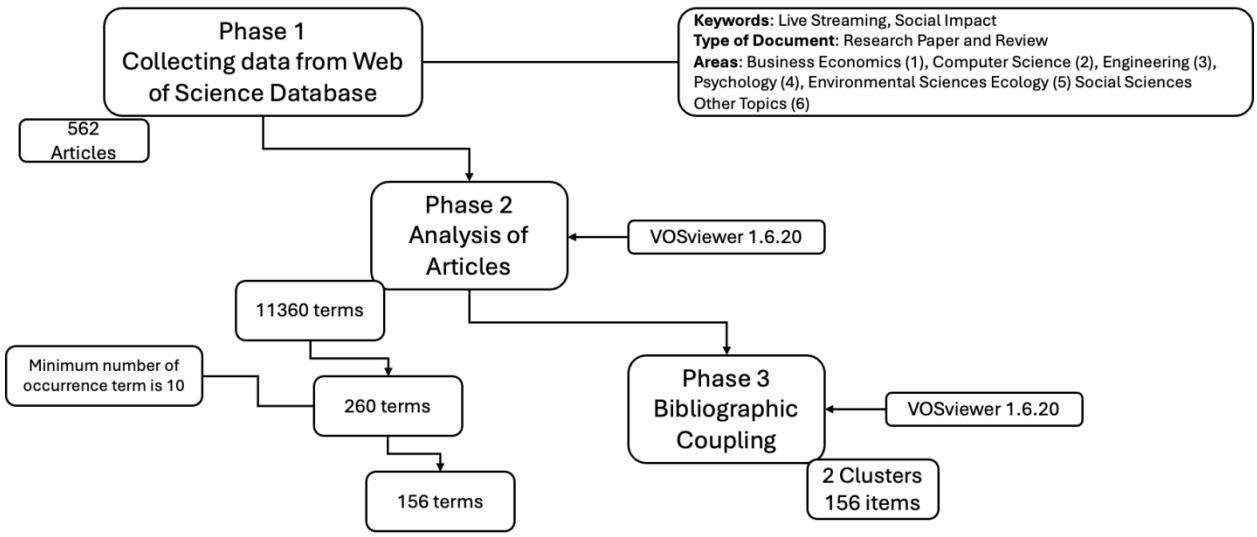



Figure 1. The steps utilized for doing a systematic literature review.

The image depicts a research process involving the collection and analysis of data related to live streaming and its social impact.

Phase 1 focuses on data collection from the Web of Science database. The search yielded 562 articles across various disciplines like Business Economics, Computer Science, Engineering, Psychology, Environmental Sciences, and Social Sciences. In Phase 2, these articles underwent analysis, likely involving techniques like content analysis or thematic coding, resulting in the identification of 11,360 terms. Further refinement narrowed this down to 260 key terms, possibly representing the most salient themes or concepts within the literature. Phase 3 involves two parallel processes. The first continues the term analysis, further reducing the focus to 156 highly relevant terms. The second employs bibliographic coupling, a technique that identifies clusters of articles that frequently cite the same sources. This resulted in 2 clusters containing 156 items, suggesting two main bodies of literature within the field.Overall, the image provides a visual representation of the research workflow, highlighting the key stages of data collection, analysis, and synthesis involved in investigating live streaming and its social impact. The use of VOSviewer suggests a focus on visualizing and understanding the relationships between key terms and articles within the field.

The RStudio application was used for data analysis, which begins with data cleaning and preparation to ensure precision and reliability. This process includes eliminating extraneous data, standardizing textual formats, and rectifying errors for data integrity and quality control (“Data Analysis Using R Programming”, 2023). Utilizing R packages for scientometric analyses can yield extensive insights into diverse study domains through the application of distinct analytical methodologies. Co-citation analysis is a valuable tool for tracking the

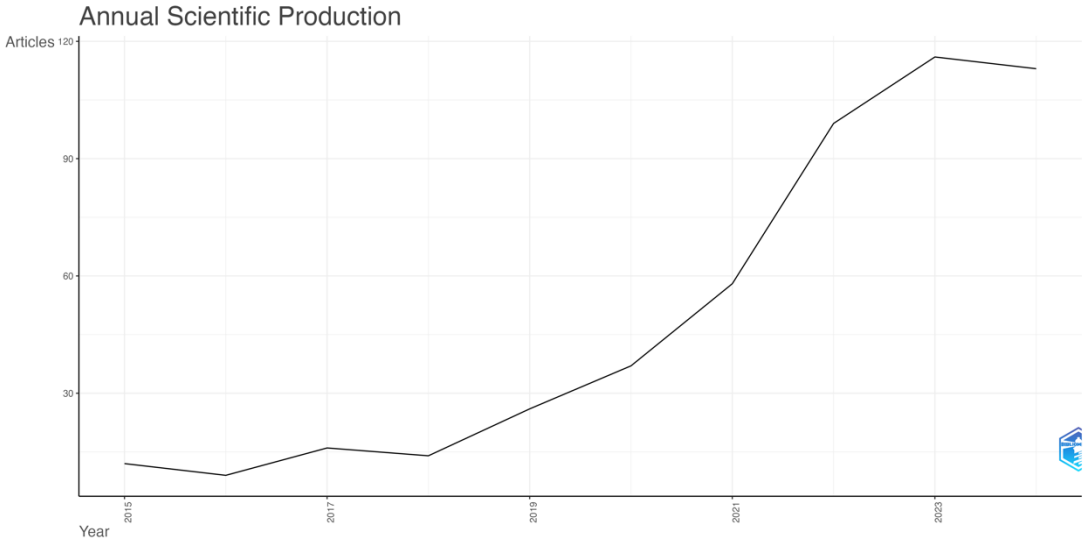
development and trends in a specific research field. Utilizing the Tree of Science algorithm to discover important scientific output, influential journals, and prominent academics. This analysis helps to identify three primary subtopics within the field of co-citation analysis (Robledo-Giraldo et al., 2023). VOSviewer's network visualization is crucial for generating network maps that depict elements such as articles, keywords, or authors as nodes, and the interactions between these entities as edges. The nodes' size and color frequently indicate aspects such as how often they are published or their importance within the network. This visual depiction of the data's structure and relevance allows for easy interpretation. This technique is in line with the overarching objectives of information visualization, which seeks to assist decision-makers in efficiently navigating and comprehending intricate data sets (Didimoet al., 2024).

The utilization of both RStudio and VOSviewer in this study enables a rigorous and all-encompassing examination of the live streaming research domain. RStudio's proficiency in data processing of Annual Scientific Production, Sources' Production over Time and the Most Global Cited Documents, guarantees the precision and dependability of the outcomes, while VOSviewer's graphical represent Network Visualization, Overlay Visualization and Density Visualization offer a lucid and instinctive comprehension of the intricate connections and patterns in the data. By integrating both methods, this article would efficiently analyze the extensive literature on live streaming, pinpoint significant themes and trends, and acquire useful insights into the development and prospects of the area.

## III. RESULTS

This section provides an analysis of the distribution of the searched publications based on their annual scientific production, most relevant sources, and total citation per year. This section also provides a thorough bibliographic study, encompassing network visualization, overlay visualization, and density visualization. All the results reported in this section were derived from the Clarivate, Web of Science. The analysis methods employed on the complete collection of documents obtained using the provided search string in the previous section were reviewed.

### A. Annual Scientific Production



**Annual Scientific Production**

Plot Table

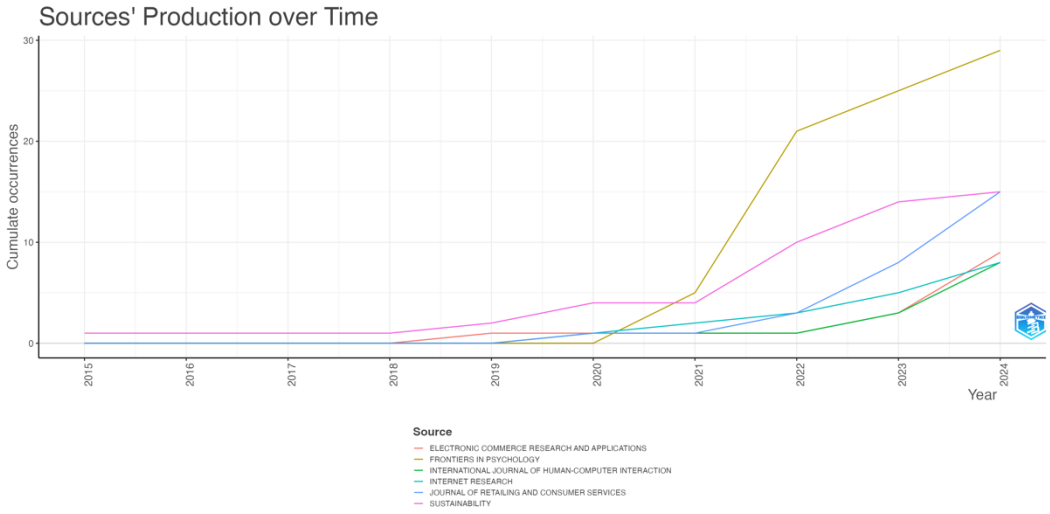
Show 10 rows ▼ Excel

| Year | Articles |
|---|---|
| 2015 | 12 |
| 2016 | 9 |
| 2017 | 16 |
| 2018 | 14 |
| 2019 | 26 |
| 2020 | 37 |
| 2021 | 58 |
| 2022 | 99 |
| 2023 | 116 |
| 2024 | 113 |

Figure 1. Annual Scientific Production
Source: Results of data analysis using Biblioshiny, R Studio

An analysis of the keyword "Live streaming" and "Social impact" was conducted, examining publication trends across 500 research articles from 2015 to 2024. The annual distribution of publications is as follows: 2015 (12 articles), 2016 (9 articles), 2017 (16 articles), 2018 (14 articles), 2019 (26 articles), 2020 (37 articles), 2021 (58 articles), 2022 (99 articles), 2023 (116 articles), and 2024 (113 articles). Figure 1 depicts the publication trend over this ten-year period. The analysis indicates a significant increase in the scholarly interest in the nexus between live streaming and its social impact, particularly in recent years. The substantial rise in publications since 2019, peaking in 2023, suggests a growing recognition of live streaming's importance and influence in various social contexts. This trend warrants further investigation into the specific social impacts being explored, the methodologies used, and the potential implications of this rapidly evolving research area.

**B. Sources Production Overtime**



**Sources' Production over Time**

Plot | Table

Show all rows | Excel | Search:

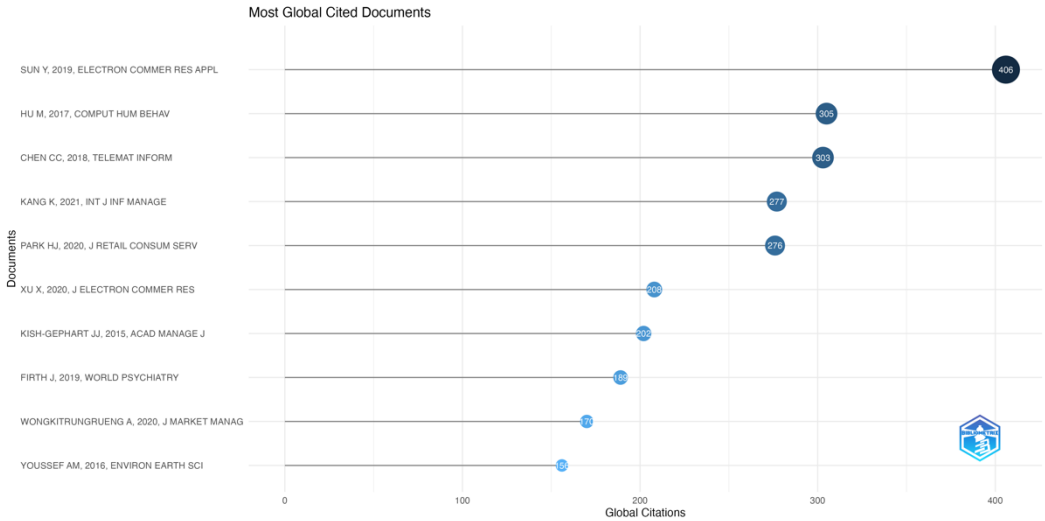
| Year | FRONTIERS IN PSYCHOLOGY | JOURNAL OF RETAILING AND CONSUMER SERVICES | SUSTAINABILITY | ELECTRONIC COMMERCE RESEARCH AND APPLICATIONS | INTERNATIONAL JOURNAL OF HUMAN-COMPUTER INTERACTION | INTERNET RESEARCH |
|---|---|---|---|---|---|---|
| 2015 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2016 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2017 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2018 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2019 | 0 | 0 | 2 | 1 | 0 | 0 |
| 2020 | 0 | 1 | 4 | 1 | 1 | 1 |
| 2021 | 5 | 1 | 4 | 1 | 1 | 2 |
| 2022 | 21 | 3 | 10 | 1 | 1 | 3 |
| 2023 | 25 | 8 | 14 | 3 | 3 | 5 |
| 2024 | 29 | 15 | 15 | 9 | 8 | 8 |

Figure 2. Sources' Production over Time

Source: Results of data analysis using Biblioshiny, R Studio

Figure 2 illustrates the cumulative number of publications over time (2015-2024) for the top 6 (six) sources within a specific research area. The table has six sources, encompassing several fields such as psychology, consumer services, sustainability, electronic commerce research, human-computer interface and Internet Research. The data demonstrates a conspicuous pattern of escalating publications over the years. Although most sources had no publications in the early years but have exhibited a consistent increase in recent times. Remarkably, the number of publications on "Sustainability" has experienced a substantial surge after 2020. The journal "Frontiers in Psychology" has experienced a significant rise, particularly starting from 2021. Overall, the table provides a comprehensive view of the publication patterns of various academic sources throughout time, demonstrating a noticeable increase in productivity and a rising focus on specific fields, such as sustainability and psychology. The rise in sustainability and psychology publications is attributed to societal awareness of environmental issues and mental well-being. As climate change impacts, there is a focus on sustainable practices and solutions. Educational psychology can foster pro-environmental behavior and sustainable leadership(Tung et al., 2024). Mental health challenges, exacerbated by social media and the metaverse, have led to increased research on inclusivity and accessibility in technological advancements(Mohanraj and Mamilla, 2024). The interconnectedness between environmental well-being and mental health is recognized, leading to the development of eco-generativity and the role of social media in disseminating information about sustainability and climate change(Abdullah and Azizan, 2024; Nagvanshi and Gupta, 2024).

## C. Most Global Cited Documents



**Most Global Cited Documents**

Plot | Table

Show 10 rows | Excel | Search:

| Paper | DOI | Total Citations | TC per Year | Normalized TC |
|---|---|---|---|---|
| SUN Y, 2019, ELECTRON COMMER R A | 10.1016/j.elerap.2019.100886 | 406 | 67.67 | 11.01 |
| HU M, 2017, COMPUT HUM BEHAV | 10.1016/j.chb.2017.06.006 | 305 | 38.13 | 6.88 |
| CHEN CC, 2018, TELEMAT INFORM | 10.1016/j.tele.2017.12.003 | 303 | 43.29 | 4.94 |
| KANG K, 2021, INT J INFORM MANAGE | 10.1016/j.ijinfomgt.2020.102251 | 277 | 69.25 | 10.40 |
| PARK HJ, 2020, J RETAIL CONSUM SERV | 10.1016/j.jretconser.2019.101934 | 276 | 55.20 | 6.73 |
| XU XY, 2020, J ELECTRON COMMER RE | NA | 208 | 41.60 | 5.07 |
| KISH-GEPHART JJ, 2015, ACAD MANAGE J | 10.5465/amj.2013.1204 | 202 | 20.20 | 6.01 |
| FIRTH J, 2019, WORLD PSYCHIATRY | 10.1002/wps.20617 | 189 | 31.50 | 5.12 |
| WONGKITRUNGRUENG A, 2020, J MARKET MANAG-UK | 10.1080/0267257X.2020.1748895 | 170 | 34.00 | 4.14 |
| YOUSSEF AM, 2016, ENVIRON EARTH SCI | 10.1007/s12665-015-4830-8 | 156 | 17.33 | 3.58 |

Figure 3. Most Global Cited Documents

Source: Results of data analysis using Biblioshiny, R Studio

Figure 3 presents a list of the most globally cited documents, primarily journal articles, along with their respective citation counts. The citation count signifies how frequently each document has been referenced by other researchers, indicating its influence and importance within the academic community. Key insights from the image include the identification of the top-cited document, "SUN Y. 2019, ELECTRON COMMERC RES APPL," which stands out with 408 global citations, showcasing its significant impact in the field of electronic commerce research and applications. The list encompasses diverse research areas such as computer human behavior, telematics and informatics, information management, retail and consumer services, management, and even environmental science and psychiatry. This diversity suggests a broad range of influential topics across different disciplines. The citation counts vary widely, from over 400 for the top document to around 100 for the least cited, reflecting the varying degrees of impact and recognition within the academic community. Most of the listed documents were published between 2015 and 2021, providing a snapshot of recent influential research within this timeframe. Overall, the image offers valuable insights into the most influential research works across various fields, as determined by their global citation counts. This information can be useful for researchers, academics, and practitioners seeking to identify key references and understand the current state of knowledge in the respective areas of interest.

### D. Network Visualization

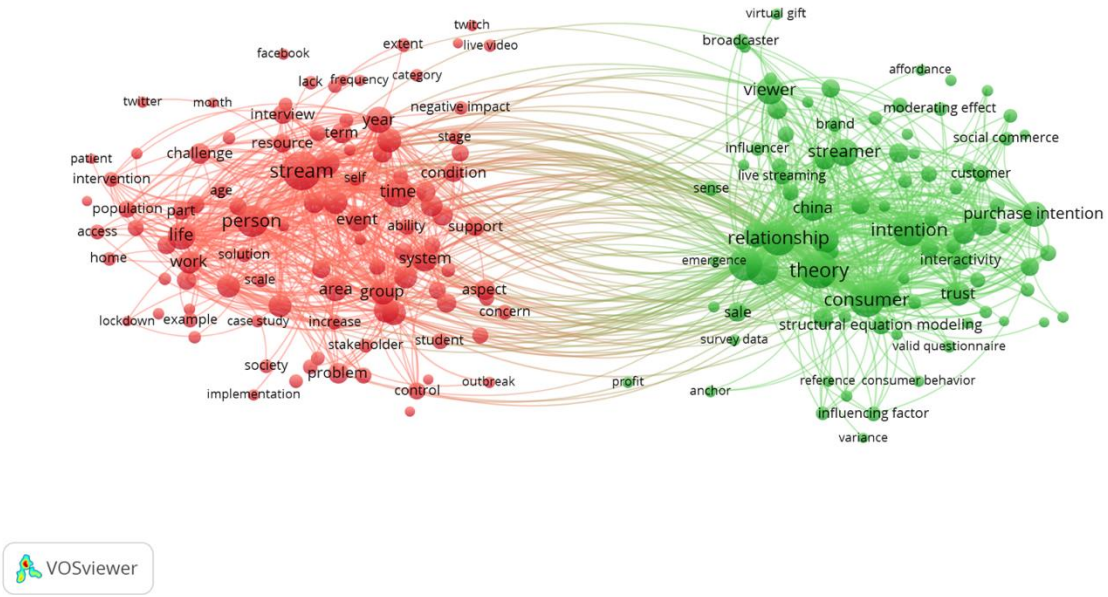



Figure 4. Network Visualization

Source: Results of data analysis using Vos Viewer

Figure 4 depicts a visualization of a network of terms and concepts related to live streaming, generated using VOSviewer software. Key insights from the visualization include the identification of two main clusters. The first cluster, shown in red, focuses on the technical and social aspects of live streaming. It includes platforms such as Twitch and Facebook Live, various content types like live video and virtual gifts, participants including broadcasters, viewers, influencers, and streamers, and interactions such as interactivity and relationships. The second cluster, shown in green, centers on the impacts and outcomes of live streaming, particularly in the context of commerce and consumer behavior. This cluster encompasses business concepts like social commerce and brand, consumer actions such as purchase intention and consumer trust, and research methods including structural equation modeling, survey data, and valid questionnaires.

**Cluster 1 Stream – Quality Communication Model**

**Purchase Intention and Social Commerce**

In the context of live streaming, buying intention pertains to a consumer's desire or willingness to buy a product or service that is presented during a live stream. Social commerce refers to the utilization of social media channels, such as live streaming, to facilitate online shopping and sales(Oktavianus and Meng, 2024; Vladimirova et al., 2024). Live streaming is a powerful tool for driving social commerce by creating interactive experiences that significantly influence purchase intentions(AI et al., 2024; Ling and Masrom, 2023), boosting sales and revenue(Huang et al., 2024; Jhang-Li and Liou, 2024; Ye et al., 2024) by fostering trust and credibility through direct interaction with streamers (Ji et al., 2024; Jiang et al., 2024).

**Streamer-Viewer Interaction and Consumer Trust**

In the realm of live streaming, the interaction between streamers and viewers plays a pivotal role in shaping consumer trust and driving purchase intentions(Dabbous et al., 2020). This interaction can manifest through various forms such as comments, reactions, virtual gifts, and direct conversations, which collectively enhance the viewer's engagement and trust in the streamer(Hu et al., 2017). Research indicates that perceived attributes of streamers, such as attractiveness, competence, and trustworthiness, significantly influence viewer engagement and their subsequent behavioral intentions (Chen et al., 2024). Trust is crucial for driving purchase intentions and converting viewers into customers(Chen et al., 2022; Hajliet al., 2017).

**Challenges and Resources**

Live streaming faces numerous challenges, including technical issues, content creation(Jiang et al., 2021), audience engagement(Keinänen, 2017), and monetization strategies(Johnson and Woodcock, 2019). Cloud-based live streaming requires low-latency and high-quality video transmission (Kumar et al., 2024). To address these, AI, innovation, and robust laws are needed (Yu, 2023). The post pandemic has expanded live streaming into daily life, increasing competition and the need for differentiation (Palumbo, 2023). To overcome these challenges, resources like advanced software, hardware, online communities, and mentorship programs can help improve professionalism and skills (Li, 2023).

**Cluster 2. Purchase intention – interactivity model**

**Influencing Factors and Consumer Behavior**

Live streaming in e-commerce is influenced by internal factors including trustworthiness, social influence, and perceived ease of use (AI et al., 2024). External factors include anchor characteristics, social interaction, and perceived value (Liu and Hamid, 2024b). The post pandemic has accelerated the adoption of live streaming as a sales mode due to its timeliness, entertainment value, and interactivity (Zhang et al., 2024). Peer viewers and viewing group size also impact individual behaviors, including gift-giving (Luo et al., 2024). A systematic literature review identified 40 factors influencing purchase intention in live-streaming shopping, highlighting the complexity of consumer behavior (Mindiasariet al., 2024).

**Social media and Live streaming**

Social media platforms like Twitter, Facebook, and Instagram are crucial for real-time interaction and information dissemination(Singh et al., 2019), providing valuable insights into user profiles, posts, comments, and public opinion (Pustilnik and Besio, 2019). Social media also enable real-time updates and commentary on events, making news coverage more accessible (Highfield, 2019). Live streaming, a form of real-time video and audio transmission(Austerberry, 2013), complements these platforms, enhancing the immediacy and engagement of content sharing (Tsou and Leitner, 2013). These technologies have transformed how information is shared and consumed, fostering a more connected global community(Borgman, 2003).

## E. Overlay Visualization

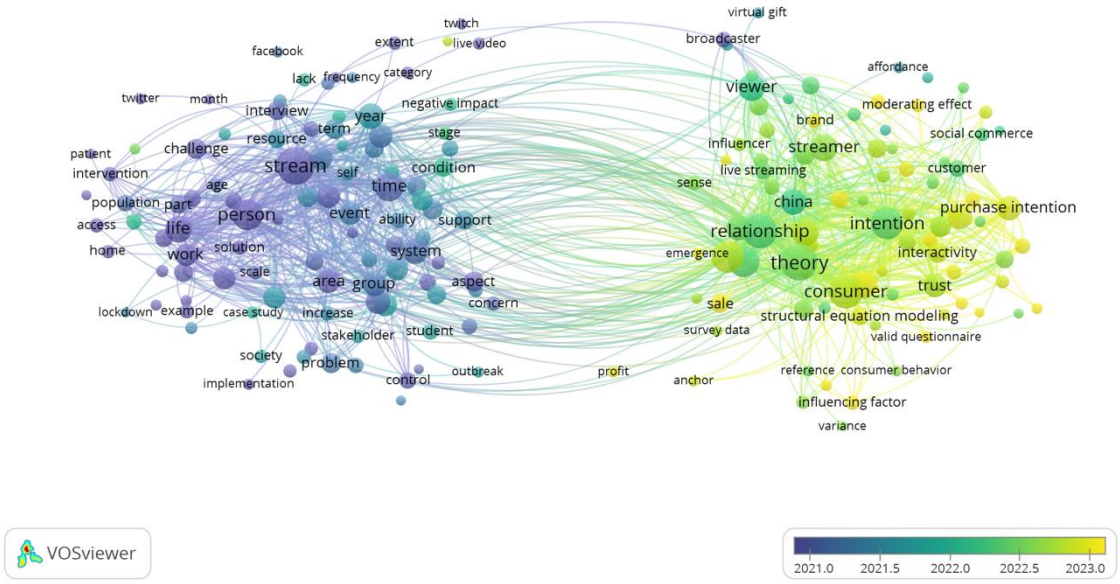



Figure 5. Overlay Visualization

Source: Results of data analysis using Vos Viewer

The graph illustrates the evolution of research publications related to live streaming and its various dimensions over the years 2015 to 2023. During 2015-2018, research on live streaming was relatively nascent, focusing on fundamental aspects like the technology itself, early platforms such as Twitch, and the concept of "real-time" interaction. This period saw foundational work exploring the potential of live streaming for entertainment, gaming, and social interaction. In 2019-2020, there was a notable increase in publications focusing on the social commerce aspect of live streaming, particularly in the context of China. The rise in publications on social commerce in China is linked to platforms like Taobao Live, which integrate live streaming into e-commerce, transforming shopping through real-time data streaming and AI technologies (Mantri, 2024). The research landscape expanded further in 2021-2022, with studies exploring the use of live streaming in diverse contexts, including education, health, and political communication. The post pandemic likely accelerated this trend, as live streaming became a crucial tool for connecting people during lockdowns and social distancing(Oktavianiet al., 2024). By 2023, the research on live streaming shows continued growth, indicating a maturing field with emerging trends such as the integration of live streaming with virtual reality and the metaverse, as well as growing interest in the ethical and regulatory implications of this technology(Zhong and Adilbish, 2024b). Overall, the graph demonstrates a clear and consistent growth in research on live streaming over the years. The initial focus on technology and entertainment has broadened to encompass a wide range of applications and social impacts(Cunningham and Craig, 2019). As live streaming continues to evolve and become more integrated into our daily lives(Kelly, 2016), research in this field is expected to remain vibrant and relevant.

Live streaming research has expanded significantly over time due to technological advancements and increasing uses(Merritt and Zhao, 2022). Between 2015 and 2018, research focused on technological aspects, platforms, and real-time interaction capabilities. This period saw the incorporation of live streaming into various industries, such as social commerce(Wongkitrungrueng and Assarut, 2020). Platforms like Taobao Live in China successfully combined live streaming with e-commerce, leading to increased consumer involvement and a shift in shopping habits (Zhong and Adilbish, 2024b)(TEOH and Hong, 2024). Live streamers' competence, moral reputation, popularity, and responsiveness significantly impact customer engagement and trust (Xiong and Li, 2024b). The post pandemic has accelerated the use of live streaming in education, health, and political communication (Dinansyahet al., 2024). By 2023, research on live streaming is growing, with emerging trends focusing on virtual reality and the metaverse(Baía Reis and Ashmore, 2022). However, ethical and regulatory implications remain a concern due to its extensive usage (Wang et al., 2024). Live streaming's interactive nature and real-time promotion make it a powerful tool for businesses(Zhang et al., 2020).

**F. Density Visualization**

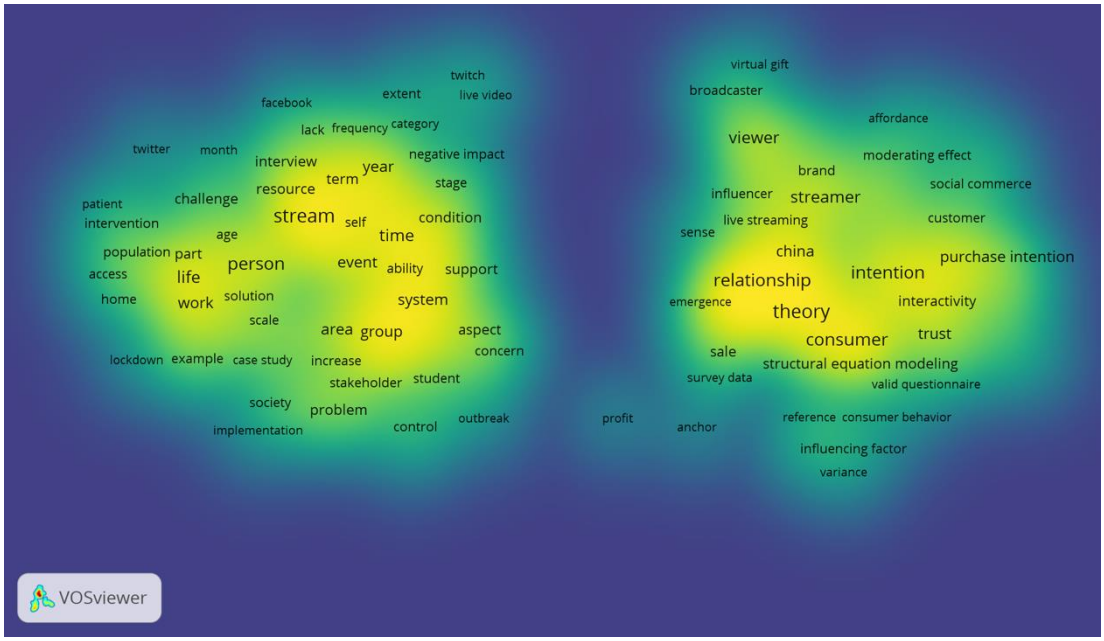



Figure 6. Density Visualization

Source: Results of data analysis using Vos Viewer

Figure 6 depicts density visualization analysis to identify the main areas of focus for future research. The discussion revolved around two primary subjects: The Stream and The Consumer. Subsequently, there were darker colors that represented the concepts of challenge, condition, person, interactivity, intention, and relationship. Meanwhile, the darkest parts consisted of negative impacts, concern, live video, trust, influencing factor, broadcaster, virtual gift, and consumer behavior.The visualization offers a comprehensive overview of the research landscape on live streaming, highlighting the diverse themes being explored. It emphasizes the importance of methodological rigor, contextual factors like lockdown and work-life balance, and the growing interest in understanding the theoretical underpinnings and long-term implications of live streaming.

## IV. DISCUSSION

The VOSviewer results offer a framework related to live streaming to improve the understanding of how marketing managers and influencers can comprehend digitalization and its unique aspects. The framework aims to provide a holistic view of the digital landscape, particularly focusing on the strategic use of live streaming for social impact and achieving business goals. The research framework focusing on the dynamic relationship between live streaming and its social impact, especially in e-commerce. It highlights two clusters: the Stream-Quality Communication Model and the Purchase Intention-Interactivity Model. Future research should explore social media's impact on purchase intention, generational differences, and cross-cultural comparisons. Understanding these factors can help marketing managers and influencers achieve business objectives in a digital world.

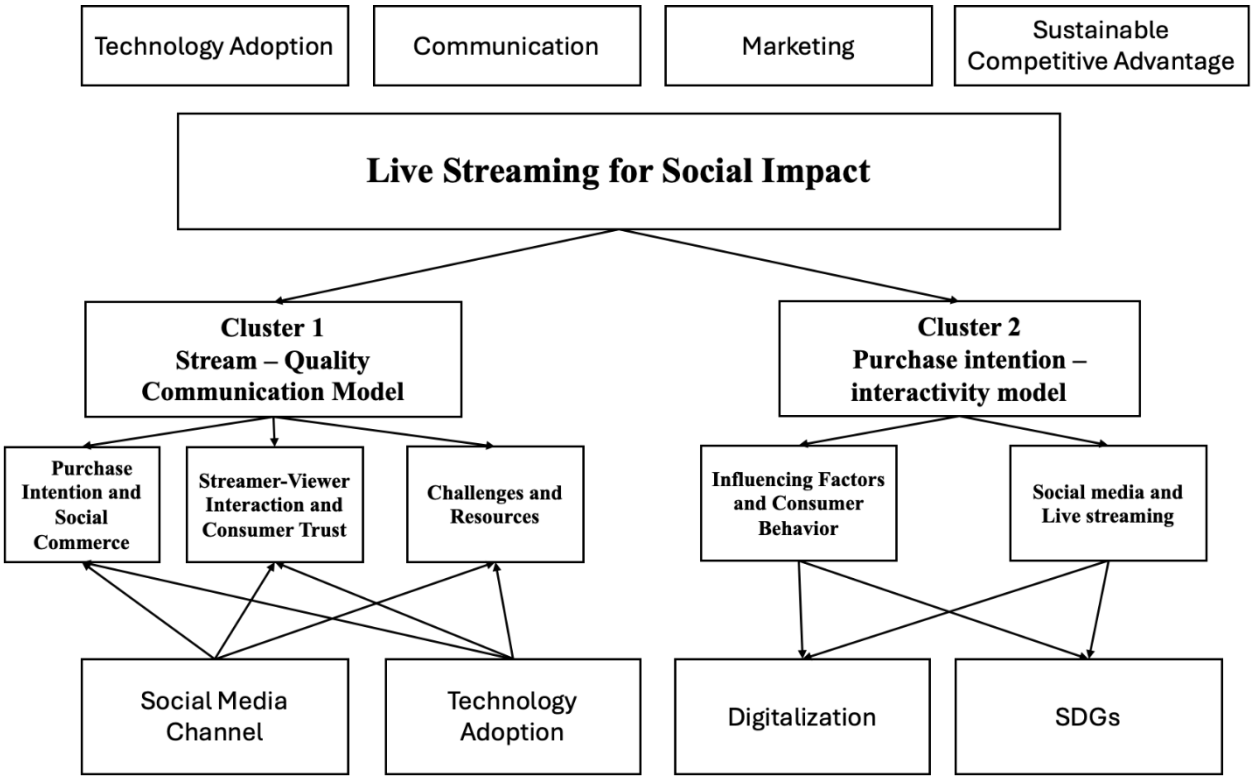



Figure 7. An analytical framework for evaluating live streaming for social impact

**Considerations and the Future Direction of Research**

This table outlines potential areas for future research related to live streaming for social impact, organized into clusters and sub-clusters. It suggests various empirical studies that could be conducted to further understand the landscape. Firstly, under the "Stream Quality-Communication Model" cluster, it proposes investigations into the relationship between purchase intention and social commerce, the dynamics of streamer-viewer interaction and consumer trust, and the challenges and resources associated with live streaming in a social impact context. Secondly, the "Purchase Intention-Interactivity Model" cluster recommends empirical studies on influencing factors and consumer behaviour, the role of social media and live streaming, and how the Purchase Intention-Interactivity Model, Stream Quality, and Communication Model interplay to drive live streaming for social impact. It further suggests investigating these models across different generational cohorts (Millennials, Gen Z, and Gen Alpha) and in diverse economic contexts (developing and developed countries). Overall, this table provides a structured framework for future research in this field, highlighting key areas where further exploration and empirical investigation could enhance our understanding of live streaming for social impact.

| | Cluster and Sub Cluster | Suggestions for Future Research |
|---|---|---|
| 1 | **Stream – Quality Communication Model** | |
| | 1. Purchase Intention and Social Commerce | Conducting empirical studies among social media channel with purchase intention and social commerce.<br>Conducting empirical studies streamer viewer interaction and consumer trust.<br>Conducting empirical studies factor affecting social media channel |
| | 2. Streamer-Viewer Interaction and Consumer Trust | Conducting empirical studies among social media channel with purchase intention and social commerce.<br>Conducting empirical studies streamer viewer interaction and consumer trust.<br>Conducting empirical studies factor affecting social media channel |
| | 3. Challenge and Resource | Conducting empirical studies among social media channel with purchase intention and social commerce.<br>Conducting empirical studies streamer viewer interaction.<br>Conducting empirical studies factor affecting social media channel |
| 2 | **Purchase Intention- Interactivity Model** | |
| | 1. Influencing Factor and Consumer Behavior | Conducting empirical studies on Digitalization and SDGs<br>Conducting empirical studies on Digitalization<br>Conducting empirical studies SDGs |

| | | |
|---|---|---|
| | 2. Social Mediaand Live Streaming | Conducting empirical studies on Digitalization and SDGs<br>Conducting empirical studies Digitalization<br>Conducting empirical studies SDGs |
| 3 | Purchase Intention- Interactivity Model, **Stream – Quality Communication Model** | Investigate these models in driving live streaming in social impact |
| 4 | Purchase Intention- Interactivity Model, **Stream – Quality Communication Model** | Investigate in Generation cohort (Millenial, Gen Z, and Gen Alpha) |
| 5 | Purchase Intention- Interactivity Model, **Stream – Quality Communication Model** | Investigate in developing and developed countries |

Figure 8. Recommendations for further research.

## V. CONCLUSION

The study underscores that live streaming has evolved from a mere entertainment platform to a powerful tool with significant social impact, particularly in e-commerce, education, and community engagement. The research identified two primary clusters: one focusing on the technical and social aspects of live streaming, and the other on its impact on commerce and consumer behavior. The study emphasizes that live streaming enhances consumer trust and engagement, which are crucial for driving purchase intentions. However, challenges such as technical issues and audience engagement persist, alongside the accelerated adoption of live streaming due to the post-pandemic era. The study also highlights emerging trends like the integration of live streaming with virtual reality and the metaverse and underscores the importance of addressing ethical considerations. The research concludes by calling for further studies on cross-cultural analysis, product differentiation, and the negative aspects of live streaming, aiming to provide valuable insights for leveraging this technology for social welfare and community empowerment. The research proposes several avenues for future studies. It suggests conducting empirical studies to investigate the relationship between purchase intention and social commerce, the dynamics of streamer-viewer interaction and consumer trust, and the challenges and resources associated with live streaming in a social impact context. It also recommends exploring the influencing factors and consumer behavior in live streaming, the role of social media, and the interplay between the Purchase Intention-Interactivity Model and the Stream Quality-Communication Model in driving live streaming for social impact. Further, it proposes investigating these models across different generational cohorts (Millennials, Gen Z, and Gen Alpha) and in diverse economic contexts (developing and developed countries). These future research directions aim to provide a deeper understanding of live streaming's potential for social good and offer insights for leveraging this technology effectively for social welfare and community empowerment.

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